ELSEVIER

Volume 200, Numbers 1–2, 1st December 1996

WEAR

Contents

Editorial vii

Mechanism-based modeling of friction and wear 1
K.C. Ludema (Ann Arbor, MI, USA)

Metals

What role for contact spots and dislocations in friction and wear? 8
D. Kuhlmann-Wilsdorf (Charlottesville, VA, USA)

Sliding metallic wear test with in-process wear measurement: a new approach to collecting and applying wear data 30
A.J. Black, E.M. Kopalinsky, P.L.B. Oxley (Sydney, Australia)

A model for the mild ratchetting wear of metals 38
A. Kapoor (Sheffield, UK), K.L. Johnson, J.A. Williams (Cambridge, UK)

The influence of surface deformation on mechanical wear 45
A.A. Torrance (Dublin, Ireland)

Evaluation of the real contact areas, pressure distributions and contact temperatures during sliding contact between real metal surfaces 55
K. Váradi, Z. Néder (Budapest, Hungary), K. Friedrich (Kaiserslautern, Germany)

Surface initiated fatigue of pearlitic and bainitic steels under water lubricated rolling/sliding contact 63
P. Clayton, X. Su (Portland, OR, USA)

Unlubricated sliding and rolling/sliding wear behavior of continuously cooled, low/medium carbon bainitic steels 74
P. Clayton, N. Jin (Portland, OR, USA)

Polymers

The friction and wear of polymers in non-conformal contacts 83
C.J. Hooke, S.N. Kukureka, P. Liao, M. Rao, Y.K. Chen (Birmingham, UK)

Tribological studies of glass fabric-reinforced polyamide composites filled with CuO and PTFE 95
S. Bahadur (Ames, IA, USA), V.K. Polineni (Rutherford, NJ, USA)

Tribological behavior of polyetheretherketone, a thermotropic liquid crystalline polymer and in situ composites based on their blends under dry sliding conditions at elevated temperatures 105
J. Hanchi, N.S. Eiss, . Jr (Blacksburg VA, USA)

Abrasive wear mechanisms of fluoropolymer based composite coatings on aluminum substrates 122
M.Q. Zhang (Guangzhou, People's Republic of China), K. Friedrich (Kaiserslautern, Germany), K. Batzar (Philadelphia, PA, USA), P. Thomas (Mechelen, Belgium)

Scratching maps for polymers 137
B.J. Briscoe (London, UK), P.D. Evans (Manchester, UK), E. Pelillo, S.K. Sinha (London, UK)

Ceramics

Magnetic fluid grinding of advanced ceramic balls 148
N. Umehara, K. Kato (Sendai, Japan)

Ceramic wear maps 154
S.M. Hsu (Gaithersburg, MD, USA), M.C. Shen (College Park, MD, USA)

Elsevier Science S.A.

The relationship between microstructure and wear of mica-containing glass-ceramics 176
V.S. Nagarajan, S. Jahanmir (Gaithersburg, MD, USA)

Quantification of fretting damage 186
S. Fouvry, P. Kapsa, L. Vincent (Ecully, France)

Abrasion resistance of nanostructured and conventional cemented carbides 206
K. Jia, T.E. Fischer (Hoboken, NJ, USA)

Modeling and microstructural modification of alumina ceramic for improved tribological properties 215
K.-H. Zum Gahr (Karlsruhe, Germany)

Direct current bias applied to hot flame diamond deposition produces smooth low friction coatings 225
S. Hogmark, P. Hollman, A. Alahelisten, P. Hedenqvist (Uppsala, Sweden)

In situ analysis of the tribochemical reactions of diamond-like carbon by internal reflection spectroscopy 233
J.E. Olsen, T.E. Fischer, B. Gallois (Hoboken, NJ, USA)

Dynamic measurements of damage generation in single crystal silicon due to sliding contact with a spherical diamond 238
Y. Li (Shaumburg, IL, USA), S. Danyluk (Atlanta, GA, USA)

Magnetic Storage Systems

Tribology of videotapes 244
H. Osaki (Miyagi, Japan)

Wear of tribo-elements of video tape recorders 252
Y. Mizoh (Osaka, Japan)

Contact analysis of three-dimensional rough surfaces under frictionless and frictional contact 265
M.M.-H. Yu, B. Bhushan (Columbus, OH, USA)

Effects of particle size, polishing pad and contact pressure in free abrasive polishing 281
Y. Xie, B. Bhushan (Columbus, OH, USA)

Micro-tribology

Recent progress in microtribology 296
R. Kaneko (Wakayama, Japan), S. Umemura, M. Hirano, Y. Andoh, T. Miyamoto (Tokyo, Japan), S. Fukui (Tottori, Japan)

Surface engineering and microtribology for microelectromechanical systems 305
K. Komvopoulos (Berkeley, CA, USA)

Lubrication

Generalized effects in confined fluids: new friction map for boundary lubrication 328
G. Luengo, J. Israelachvili (Santa Barbara, CA, USA), S. Granick (Urbana, IL, USA)

Fractionation of liquid lubricants at solid surfaces 336
G. Guangteng, H. Spikes (London, UK)

Shear of confined perfluorinated molecules: Effect of side branching 346
Y.-K. Cho, S. Granick (Urbana, IL, USA)

On the flow of emulsions in tribological contacts 353
A.Z. Szeri (Newark, DE, USA)

Author Index of Volume 200 365

Subject Index of Volume 200 367

The publisher encourages the submission of articles in electronic form thus saving time and avoiding rekeying errors. A leaflet describing our requirements is available from the publisher upon request.